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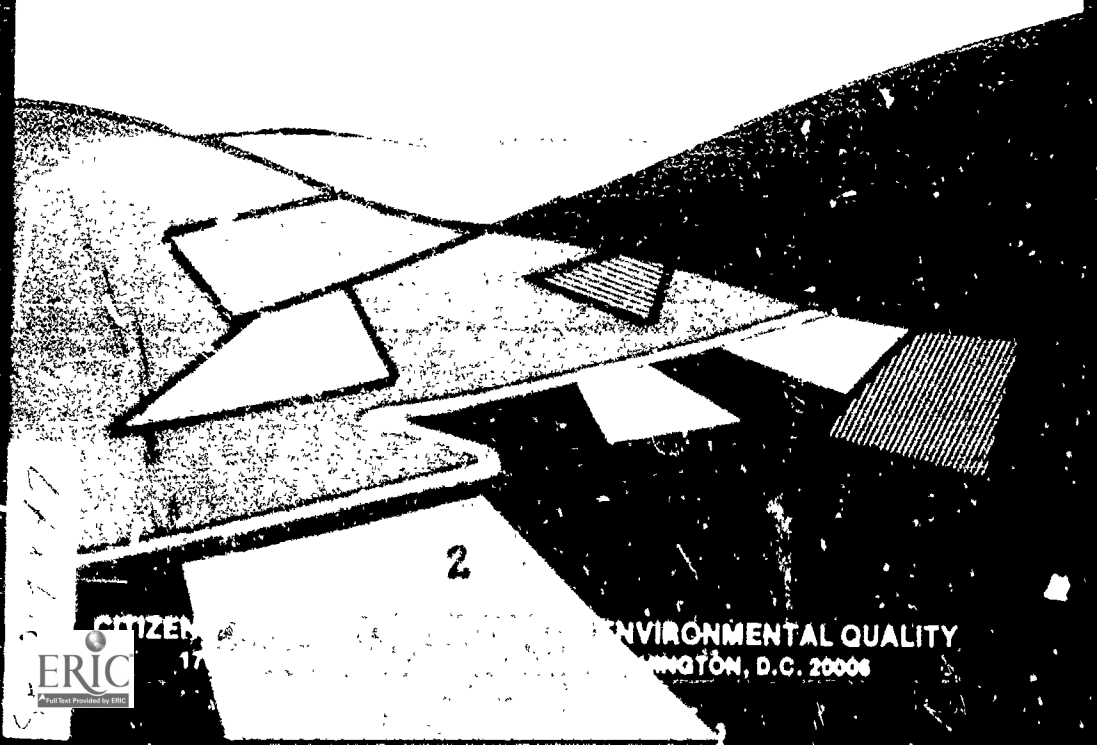
ABSTRACT

This report discusses three current environmental concerns. First, the report addresses the energy crisis and recommends the establishment of a balance between increased domestic energy supplies and reduced domestic energy demands, the recycling of solid wastes to save energy and materials, and the need to view short-term and long-term energy development in terms of net energy gained. Second, the report presents the problem of loss of agricultural land to urban development. The committee recommends federal and state land use plans to combat possible agricultural production losses. Third, the report discusses the need for change in Americans' living patterns to relieve pressure on natural resources and the rural environment. (MR)

REPORT TO THE PRESIDENT AND TO THE COUNCIL ON ENVIRONMENTAL QUALITY



ENVIRONMENTAL QUALITY
WASHINGTON, D.C. 20006

CITIZENS' ADVISORY COMMITTEE ON ENVIRONMENTAL QUALITY

1700 PENNSYLVANIA AVENUE, N.W./WASHINGTON, D.C. 20006/(202) 223-3040

December 31, 1974

Dear Mr. President and Members of the Council:

It is with pleasure that the Citizens' Advisory Committee on Environmental Quality submits this report.

The energy crisis is a difficult challenge for America, but it also provides new opportunities to strengthen the American economy as well as to protect the environment so vital to our future. How to capitalize on these opportunities is the critical question to which much of this report is addressed.

Some of the highlights:

* To reduce the vulnerability that stems from our present dependence upon imported oil, almost all agree that there must be a proper balance between increased domestic energy supply and reduced domestic energy demands. The Committee believes that balance should avoid overemphasis on new development at the expense of energy conservation. Conservation strikes directly at the fundamental issues of waste and inefficiency and can produce almost immediate energy savings.

* Major savings of both energy and materials can be achieved through the recycling of solid waste and the elimination of waste in the manufacture and use of the automobile.

* It takes energy to develop energy, and each year an increasing fraction of the total energy produced is used in finding, extracting, processing, and delivering the net energy available to the consumer. Thus, we must become net energy conscious in looking at both the short-term and long-range future.

The report also addresses the serious environmental problem of the loss of good agricultural land -- primarily to urban development. During the last four years, we have moved from a surplus to a shortage of agricultural production. Although several States and local governments are trying to stem this loss, the issue has broad domestic and international implications and merits priority attention at the Federal level. Agriculture would be a major beneficiary of sound national land use planning legislation. Comprehensive State land use plans, which would be stimulated by such legislation, would focus attention on the critical importance of agricultural land and the need for preserving it.

The report notes that living patterns are in the process of change. As a result of energy shortages and inflation, Americans are beginning to recognize how completely dependent they are on physical resources and the environment. There is apprehension over what may be lost as a result of these changes but relatively little understanding about what can be gained. The Committee believes that certain changes are necessary and desirable and that the net effect of these changes will be a life style that can be more rewarding to individual citizens and beneficial to our society.

There is a broad consensus among us on the basic recommendations, although each member of the Committee does not necessarily endorse each detail. We as a Committee stand ready to help in carrying out the recommendations of this report.

Sincerely,

Henry L. Diamond

Henry L. Diamond
Chairman

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A YEAR OF ENVIRONMENTAL CHALLENGE

The gist of this report is that the energy crisis can be made a blessing. It has forced us to see truths we should have seen earlier but cared not to. It has forced us to reckon the wastefulness of American ways of life, and, at last, to do something about it. What the follow through shall be is the critical question and it is to the specifics of this that the committee s report is addressed.

It has taken a crisis to bring us to this point, and it is a very real one. During the past year the far reaching effects of the Arab oil embargo 1973-74 have become dramatically evident. This precipitous action suddenly thrust the entire world into a new era—an era of international debate and confrontation involving oil, food, and other key natural resources, as well as massive new transfers of wealth among nations of the world.

In the United States the shock waves were particularly dramatic. Most Americans were stunned by the realization of their dependence on oil imports, and this resulted in an unprecedented anxiety about domestic energy supplies and the ways and means to reduce reliance on foreign sources.

The embargo led quickly to a series of attacks on environmental protection programs. Many of those who advocated the development of domestic energy sources at any cost declared an open season on any environmental safeguards that appeared to stand in their way. Air and water quality standards were viewed as unnecessary impediments to an all out effort to produce more energy. Almost overnight, the defenders of environmental quality were faced with a fundamental, unprecedented, and continuing chal lenge—to prove that the Nation s environmental goals are not in conflict with its energy and economic goals but rather that they are inseparably intertwined and interdependent. Thus, the Committee believes there is a continuing necessity to demonstrate that if we wish not only to protect our environment but also to sustain our economic base, we must abandon our destructive attitude toward our earth and its limited resources.

The most immediate effect of the oil embargo in the United States was long queues at filling stations. And it hurt. But Americans rallied to the situation. They cut back on energy consumption by reducing highway speeds, by car pooling, and by increased use of public transportation, by switching to daylight saving time; and by turning down their thermostats.

Fortunately, that winter was relatively mild, and with substantial voluntary cutbacks in fuel consumption, America survived the five month oil embargo without major catastrophies. But when Arab oil shipments resumed in March, some of the conservation mandates were removed, and as soon as long lines at the gasoline stations disappeared, people reverted to their former spend thrift ways. By midsummer, motorists were again stalled in rush hour traffic jams. Whatever, one could wonder, happened to the energy crisis?

But the energy crisis had not really gone away, still has not, and it probably never will. The price of gasoline is still at least 50 percent more than it

"A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise."

Aldo Leopold
A SAND COUNTY ALMANAC

The Committee members stop for a coffee break during their visit to the Aldo Leopold Reserve in conjunction with a meeting in Madison, Wisconsin.

was in 1973 Oil is no longer in short supply, but an uneasiness persists that foreign oil supplies might be shut off again by the Arabs if their asking prices are not met.

The hard fact remains that some things are just not going to be the same again Energy is becoming increasingly expensive. And as the past year has shown, our interrelated international problems of energy, food, population, and the economy will continue to challenge not only the quality of our environment but our way of life as we have known it for the past 30 years.

For the most part, attempts to blame environmental protection measures for the energy shortage have been unsuccessful. Reliable data developed by the Environmental Protection Agency and the Council on Environmental Quality showed that technical difficulties, equipment shortages, labor problems, and uncertainty about the economy had more effect than environmental objections in delaying new refinery and nuclear plant construction. Similarly, reliable statistics proved that poor gasoline mileage was caused more by automobile weight, air-conditioning equipment, and automatic transmissions than by vehicle emission controls.

Nevertheless, the attacks have continued, and in the name of energy there have been various efforts to undermine the National Environmental Policy Act (NEPA), the National Clean Air Act, and many other hard-won environmental safeguards. Legislation enacted in November 1973 to authorize construction of the Alaska pipeline exempted that project from further court challenge to compliance with the procedural provisions of NEPA that ordinarily apply to other Federal projects. Many observers feared that this action would establish a precedent for other exemptions. At stake also were the environmental impact statement requirements enacted by 21 States and the Commonwealth of Puerto Rico.

The fuel shortage had a pronounced effect on outdoor recreation. Driving for pleasure, long listed as America's favorite outdoor activity, was sharply cut back In the early days of the shortage there were proposals for banning or severely limiting all fuel consuming recreation, including power boating, off-the road vehicles, night time sports, and the closure of certain national parks.

No such broad scale bans materialized. They weren't needed. Faced with the long lines at gasoline stations, many citizens opted against using their power boats, snowmobiles, and mobile homes. Others cancelled or curtailed plans for long ranging automobile vacations. And the bans on Sunday gasoline sales further reduced pleasure driving.

The economic impact of this reduction was considerable, particularly for the operators of isolated winter resorts and the manufacturers of mobile homes, private airplanes, and other motorized recreation equipment. These were the interests that strongly resisted bans on recreation activity, favoring instead tax or rationing systems that would permit discretionary use of fuel allocations. Since neither system was implemented, the pros and cons became largely academic.

On balance, outdoor recreation did not decrease. It took place closer to home. Back yard gardening, reminiscent of the World War II victory gardens, experienced a revival. According to the Department of the Interior and the National Recreation and Park Association, participation increased significantly

"*Making urban areas livable, desireable, and attractive for people of all incomes and races is the overriding domestic challenge for the last quarter of this century. Putting the emphasis on living instead of moving is a shift in priorities that seems bound to save gasoline. If we put our minds to it, it might even save urban society.*"

Wilfred Owen

in such activities as tennis, bicycling, walking for pleasure, swimming, and other forms of recreation that could take place near home. Those who desired more extensive activities—such as hiking, fishing, and camping—sought these opportunities within a one day driving radius. At the more remote scenic parks visitation diminished noticeably, at close-in parks and recreation areas it rose accordingly.

Since lifting of the Arab oil embargo, there has been some reversion to activities oriented to longer range automobile trips. However, rising costs and declining economic conditions have continued to dampen driving for pleasure and sight seeing And the demand for close to the city facilities continues to exceed the supply.

Somewhat ironically, therefore, it seems to have taken the Arab oil embargo to prove what outdoor recreation advocates have long maintained—that more emphasis should be given to providing outdoor recreation areas and facilities in and around our cities, where two thirds of our people live.

The energy shortages also heightened the need for State land use planning This became particularly evident with proposals for broad-scale strip mining, offshore oil drilling, the construction of deep-water ports, additional oil refineries, power plants, and the housing and other development that would accompany them. The Senate passed planning legislation to help the States meet these problems. Opponents charged that this meant Federal land use control. It did not, but with the charge they were able to kill similar provisions in the House of Representatives. This was a serious set-back.

The fuel shortage did produce several important environmental and social pluses According to a study conducted by New York City s Environmental Protection Administration, air pollution diminished with the reduction in the amount of automobile traffic resulting from carpooling, switches to mass transit and smaller cars, and many other voluntary restraints. Throughout the country, the lowering of highway speed limits not only reduced gasoline consumption but was also the major factor behind a 25 percent drop in fatal automobile accidents. The "discovery" of the potential energy in garbage and trash provided a new lease on life to EPA's solid waste program, previously scheduled for phase-out.

These tangible benefits, of course, are all to the good. Of even greater significance, though, is the fact that the fuel shortage awakened the general public to the stark reality—that our earth is not an inexhaustible cornucopia, it cannot supply us with an unlimited amount of useable energy and raw materials. As EPA Administrator Russell Train said in December 1973, "Indeed, our current crisis may—in the long run—turn out to be one of the best things that ever happened to us, if we have the wisdom to heed its lesson" Later he added, "The Arab embargo is an early warning signal that we had better reduce our rates of energy consumption to more sustainable levels if we are to avert even greater hardships."

Now it is later, and there is less basis than ever for complacency. As this Committee has stated previously, we can no longer afford the prodigal or "throwaway" philosophy that has increasingly pervaded our living patterns since World War II. Instead, we must move toward a conservation ethic that will require restructuring of many living patterns.

The environment, in sum, fared better than many people expected it would a year ago. The Nation's basic environmental legislation, the National Environmental Policy Act, remains unaltered. And mid 1975 is still the nominal target date under the Clean Air Act of 1970 for States to achieve compliance with Federal air quality standards. There were some inroads on environmental quality—chiefly shifts of some power plants to less clean fuel and delays in the program for minimizing automobile emissions.

On the other hand, the energy crunch brought about some national retrenchment in energy consumption, it increased emphasis on development of public transit and close in recreation facilities, and it renewed interest in recycling our resources. A vast majority of Americans, as an EPA-sponsored public opinion poll in May indicated, favored fighting pollution as much as they did prior to the oil embargo.

Thus far, then, the "energy crisis" has been a net environmental plus. The job ahead is to capitalize on this situation and the time is right to do so. A new administration provides the opportunity to reexamine past policies, to break away from ill advised precedents, and to initiate new concepts and programs. The following chapters discuss the major opportunities.

ENERGY, THE ECONOMY, AND THE ENVIRONMENT

The word "crisis" is not to be used lightly. But we have surely reached one. By any other name, the situation is the same—the relationship between man and the earth's natural resources has reached a critical juncture. Unless action is taken soon to reduce the waste of our dwindling natural resources, unless we recycle and reuse more of the products we consume, and unless we carefully protect the environment in doing so, America will no longer be beautiful or bountiful.

Or economically healthy. To tackle the environmental problems is not to scant problems of energy and the economy. They are all inextricably linked. To date, most proposals for attacking these problems have not been linked, and they have been directed at only the most immediate effects. ***The Committee believes that equal attention must be given to the long term—to causes as well as the effects of the problems.***

In the United States the effects are abundantly evident. The economy is experiencing an unprecedented paradox of inflation and recession, both accentuated by our dependence on high cost oil imports. The higher price of these imports, according to former Secretary of Commerce Peter G. Peterson, has accounted for about half the increase in the wholesale price index. The corresponding reduction in purchasing power has slowed production and resulted in layoffs in many industries.

Despite this dependence, we continue to be enormously affluent. Many Americans, to be sure, still are struggling close to a subsistence level, and these are the people most drastically affected by inflation and recession. In their life style there is no excessive purchasing, and there is little waste. But the same is not true of most middle and upper-income Americans, many of whom own more than one automobile with extravagant horsepower, use short lived, energy wasting convenience appliances, give little thought to the recovery and recycling of the excessive food, packaging, and other materials that they discard. This group includes all of us who take for granted a standard of living to which we feel, as Americans, we are entitled.

Are we? There are world wide implications to consider. After all, our standard of living—which, according to the National Commission on Materials Policy, consumed 27 percent of all resources produced in the world in 1970—has had a profound influence on the aspirations and motivations of others. It is evident that, unless we in the United States alter our own attitudes toward excessive material consumption and waste of resources, we cannot expect others to do so. We must not flaunt affluence at a time when international cooperation is so essential to resolution of the energy, economic, and environmental problems of all countries.

There are two obvious means of reducing the vulnerability that stems from our present dependence upon imported oil. (1) We can increase our

domestic energy supply, and (2) we can reduce our domestic energy demands. ***Like most who have studied this problem, the Committee believes that we must do both—at least during the 10 to 20 years needed to develop alternate sources of energy. But there is a balance to be struck. We believe it critically important to avoid overemphasis on new development at the expense of energy conservation and elimination of waste.***

Clearly the Nation must expand its efforts to increase its supply of domestic energy. There are many ways of doing this, and the time factor is important. But we should not be forced into crash programs without due regard for the economic and environmental costs involved.

It takes energy to develop energy. Massive efforts to increase our domestic energy supplies will be grossly expensive in capital outlays and operating costs. For instance, some estimates have put shale oil investments at $10,000 per barrel per day, or as much as $1 billion for only 100,000 barrels per day. Estimates for some other alternate sources vary from $7 to $15 per barrel.

How do we strike a sensible balance? The Committee believes that a relatively new tool can be most useful. This is the concept of "net energy" being developed by planners in Oregon, Florida, and elsewhere. The Oregon Office of Energy Research and Planning has described it in the following manner.

Most of the fossil fuel energy that has powered our culture has come from concentrated and easily obtainable reserves. Now we must dig deeper, transport further, upgrade dilute energies (uranium, oil shale, etc.) to obtain our energy supply.

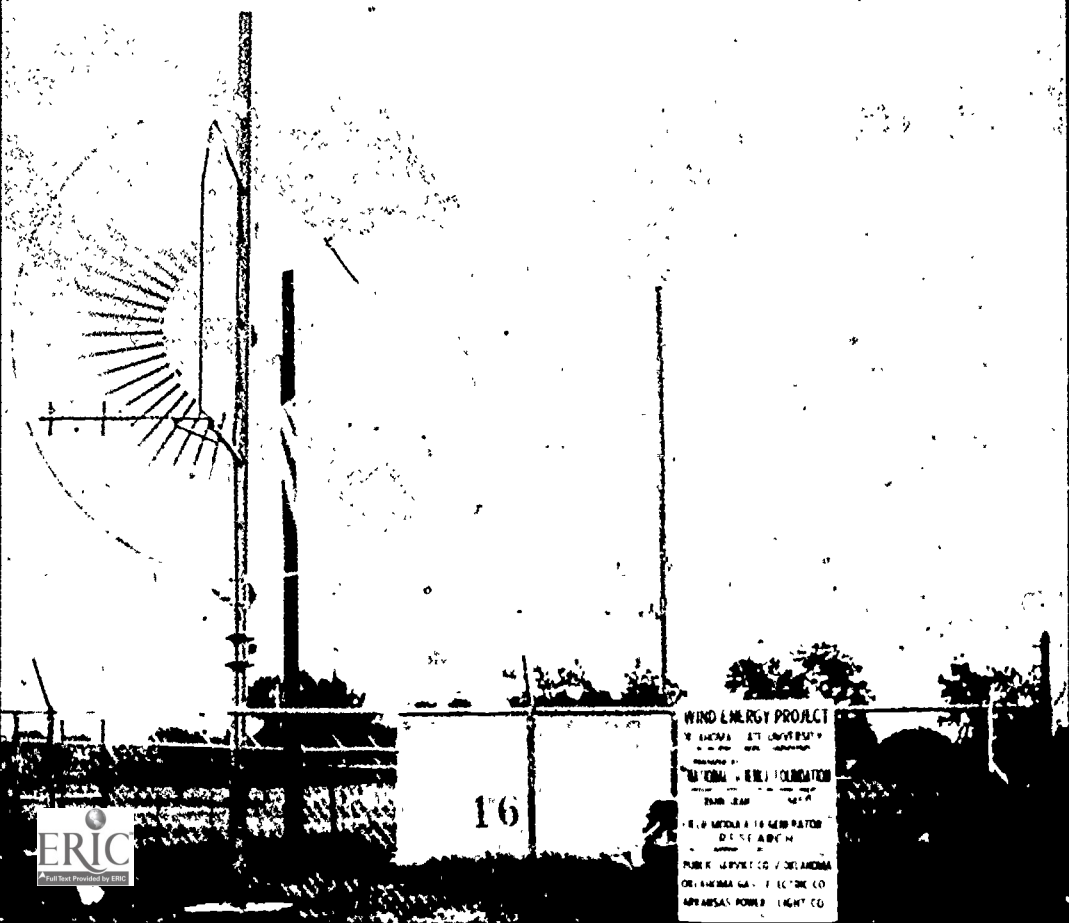
Although more total energy is produced each year, an increasing fraction of that energy is used up in obtaining the "net" energy available to the consumer. The consumer, in turn, must pay the cost of this increasing amount of "energy-getting energy" in addition to the energy cost of producing the goods and services he consumes. Everything which uses energy will cost more and more as net energy declines. This is the principal force driving world inflation.

At the same time that finite world energy reserves are being depleted, world demand and dependence upon them is accelerating. This greater competition for smaller and smaller reserves of energy is raising the monetary value of the remaining reserves, further increasing the price of energy. All the major new energy processes (oil shale, nuclear, coal gasification, etc.) being developed to replace present fuels are even more costly than the fuels they are replacing, since they will require more energy and therefore more dollars to get the energy available to the consumer (i.e., they will generate even less net energy than traditional fuels).

"Wind power is in a class by itself as the greatest terrestrial medium for harvesting and conserving solar energy. The wind and air waves circulating around planet are unsurpassed energy accumulators whose captured energy may be used to generate electrical, pneumatic and hydraulic power systems."

R. Buckminster Fuller
January, 1974

The experimental windmills connected to the Stillwater, Oklahoma Municipal Power System were coupled successfully to the city's power grid. This is the first time in thirty years that such a connection has been made.



The Committee feels that development of this "net energy" concept may be a major contribution to a more effective and realistic approach to environmental concerns. We must become "net energy" conscious if our economy and our physical well-being are to survive. It is in this context that we need to look at both our short term and long-range future. We need to examine carefully the proposed efforts to get additional oil and gas from the Arctic and the Outer Continental Shelf, to strip mine hundreds of thousands of acres of western land for coal, to wring oil out of Rocky Mountain shale, to construct hundreds of nuclear energy facilities, and to build more supertankers and deep water ports to accommodate them. Equally important, it is in this net energy context that we need to make more concerted efforts to conserve our non-renewable energy resources and utilize as rapidly as possible the potential clean energy of the sun, the winds, and the ocean currents.

Extensive efforts to increase domestic energy supplies pose several potential environmental hazards—problems of siting future power plants and waste disposal from nuclear plants, the direct and indirect results of offshore oil drilling, and the possible devastation of thousands of acres by the strip mining of western coal and shale oil deposits.

Another important factor is time. From three to five years are needed to locate and bring off shore oil sources into production. Eight to ten years are needed to get a nuclear plant into operation. Even to produce more coal, several years will be needed to catch up on the back orders of mining equipment. This, then, raises the question as to just how timely these actions will be. "Until we know which of several alternate sources of energy will best produce for our future needs, we should avoid staking all on the development of any one line," observes Amitai Etzioni, Director of the Center for Policy Research at Columbia University.

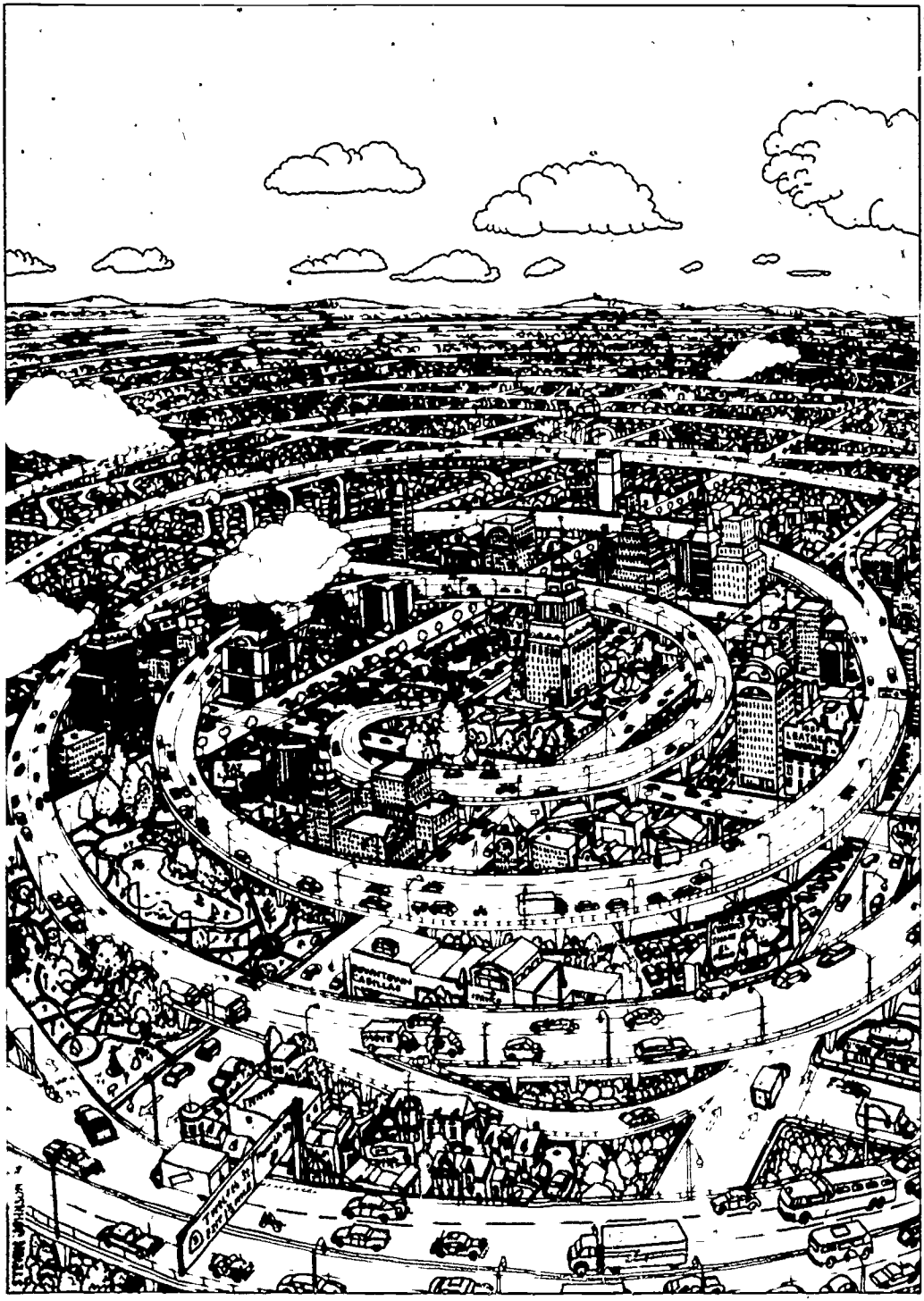
Now let us look at the other side of the coin. conservation. Here is where the great leverage is. Measures to reduce domestic energy consumption and waste can produce almost immediate results. They do not pose the environmental hazards associated with energy production. And, most importantly, these measures strike directly at the fundamental issues of waste and inefficiency.

Increased conservation is the only course of action that will produce both immediate benefits and long term security. This is true not only of energy sources but of other non renewable resources as well. It is a course that can be basically anti inflationary by reducing reliance on high-cost imports. If carried out in an orderly fashion, conservation can be used to create new markets for recycling industries to minimize recessionary forces.

The Automobile

The automobile is a prime target for conservation. It consumes nearly 30 percent of the total oil supply in the United States and more than 12 percent of the Nation's total energy. It is a very major contributor to our air pollution problem. It consumes 28 percent of the average household energy budget.

At the same time, the automobile business plays a very important role in the national economy. One of every six workers in the Nation is dependent on



the manufacture, distribution, service, and commercial use of motor vehicles. More than 800,000 businesses hinge on motor vehicles, and 24 percent of retail sales are for automotive related purchases. Motor vehicle users paid almost $19 billion in special State and Federal taxes in 1973.

But there is much waste in automobile use, and it could be eliminated without severe impacts on our economy or our modes of living. More efficient cars would reduce waste. As pointed out in the Committee's CITIZEN ACTION GUIDE TO ENERGY CONSERVATION, a compact car getting 19.5 miles per gallon and traveling 12,150 miles per year would use 277 fewer gallons of gasoline that year than a medium sized car getting 13.5 miles per gallon over the same distance. If over a five year period, one third of our 67 million families made such a conversion, the annual fuel savings during the fifth year would amount to more than one third of a million barrels of oil per day.

More car pooling is another way. Eighty-two percent of working Americans commute to their jobs in automobiles—and not very efficiently. So many of them drive alone that the average occupancy is only 1.4 people per commuter automobile. If this ratio were doubled, there would be a national savings of about two thirds of a million barrels of oil per day. During the Arab oil embargo, many new car pools were formed, and the savings were substantial. Since then, many of the pools have been dissolved and the lessons forgotten. The discipline of price may force a re-learning.

Better scheduling of family automobile trips is another easy way to reduce waste. Traveling on family business—going to the doctor or dentist or going shopping—accounts for 31.4 percent of all passenger car trips and averages 5.5 miles one way. Much of this could be reduced by planning ahead to combine the errands and appointments and thus eliminate at least one trip per week—e.g., seven instead of eight. On a nationwide basis, we could thus save 38 billion miles of driving, which at the present rate of 13.1 miles per gallon for passenger cars would save an average of about 180,000 barrels of oil per day. Combine this with the other automobile conservation measures cited above, and by 1980 the result would be a savings of about 1.2 million barrels of crude oil per day.

The potential payoffs of these conservation measures are great. With only minor modifications of life style, we could substantially reduce both unnecessary consumption and much of our dependence on foreign oil imports. The estimated savings are not based on, or conducive to, a reduction of the number of automobiles made and sold. They are based on a more *efficient* use, and this could be compatible with high production and employment for some time to come. These measures are also anti inflationary because they reduce family expenditures, the necessity for oil imports, and the outflow of American dollars. Environmentally, less gasoline consumption will lessen air pollution and reduce the urgency to scar our landscape in search of alternate sources of fossil fuels. Importantly, less gasoline consumption slows the rate at which the world's oil and other fuel supplies are being depleted.

The latter point is particularly pertinent to the automobile industry and to that part of our national economy and life style which is dependent on it. It appears that we cannot continue to rely on the gasoline powered internal

combustion automobile indefinitely. When the ultimate demise will come, no one knows, but it is important that we minimize the impact by accelerating our efforts to have a suitable substitute available when the oil finally and inevitably gives out In the meantime, the more sparingly cars can use fuel, the less painful will the transition be. An increase in automobile efficiency (i.e., the establishment of a mile per gallon standard) either on a voluntary or compulsory basis will be in the best interest not only of the Nation but of the automobile industry itself The more efficient the cars, the longer the grace period.

Energy in Our Solid Waste

Many citizens are aware of our growing solid waste problems, but few probably realize the magnitude of the loss of materials and energy involved. It is very large, and it is growing. Concern over this problem led the Committee to publish its recent booklet ENERGY IN SOLID WASTE. A CITIZEN GUIDE TO SAVING.

The Committee's booklet points out that the more efficient use of municipal garbage, trash, and litter in combination with better packaging of goods, would save the energy equivalent of three quarters of a million barrels of oil per day Based on import rates during the fall of 1974, this is more than 85 percent of the crude oil energy imported from the Organization of Arab Petroleum Exporting Countries.

There must be strong Federal action to encourage resource recovery, recycling, and reuse Here are the recommendations the Committee made in its booklet:

- Interstate transportation rates should be revised to promote the movement of recyclable materials. At present, freight rates approved by the Interstate Commerce Commission (ICC) are a contributing factor in making it more economical for producers to use virgin materials than those recovered for recycling.
- Federal agencies should be required to carry out programs of resource recovery, recycling, and reuse. For example, these agencies should be required to manage their own wastes in a way that maximizes materials and energy recovery To close the circuit, Federal purchasing practices should give priority consideration to competitive products with the highest percentage of reclaimed or recycled content.
- Consideration should be given to federal tax measures that will provide economic incentives for private industry to reduce the depletion of critical natural resources and to maximize resource recovery, recycling, and reuse. Possible means include tax incentives to encourage increased production and use of recycled materials, and rapid amortization for recycling facilities.

  The current tax system encourages the use of virgin materials through the capital gains treatment of timber and the depletion allowance on virgin minerals To offset these incentives, it would be fair to provide equivalent incentives to the reuse of scarce materials and to encourage energy savings through the recycling of such materials as steel instead of producing them from raw ore.

Provisions for rapid amortization of new recycling facilities would encourage private firms to enter the industry, now there is little resource recovery from municipal solid wastes other than various EPA-supported projects Theoretically, municipal governments could undertake this activity and sell the useable wastes. They are operating on tight budgets, however, and do not have the flexibility they need to undertake these large investments.

Any legislation in these regards should be carefully drawn to avoid either windfall profits or penalties to those already engaged in recycling operations.

- Federal Legislation requiring a refundable deposit on all beverage containers is needed to promote the use and reuse of refillable instead of throwaway beverage containers. This action would reduce litter, household rubbish, and consumer expenditures, and it would reduce the waste of critically short supplies of energy and nonrenewable resources.

Although more than 30 States and 25 communities are considering different forms of beverage container regulation, the Committee believes that Federal legislation is needed for several reasons.

The first reason is that the energy shortage is a critical national problem, and refillable beverage containers provide an inexpensive, expeditious, and energy saving alternative to the continued proliferation of energy-wasting disposable beer and soft drink containers. Nationwide resumption of an all returnable beverage container system, it has been estimated, could save the energy equivalent of about 100,000 barrels of oil per day.

Deposit legislation would be more feasible and less disruptive on a national rather than a State by State basis. Federal legislation would solve the problems of interstate bootlegging and littering as well as provide uniform requirements for containers and thus make for less economic disruption in the long run Enactment of such Federal legislation would also be highly significant as a first "waste not, want not" step toward a national conservation ethic.

The Committee recognizes that such Federal legislation problably would have adverse impacts on the industries that manufacture and market the "no-deposit, no return" cans and bottles. For this reason, the Committee believes that the legislation should include provisions for phasing its requirements over a period of time and for relieving and, or reducing the adverse effects of job relocation and production changeovers to refillable bottles.

It is important to remember that the suggested legislation would not *ban* throwaway containers, it would simply mandate a refundable deposit on each container sold. This refund would be an economic incentive to decrease waste for the consumer as well as the beverage industry. The mandatory deposit, moreover, would make Americans aware of the cost of waste.

One of the problems encountered in many efforts to promote recycling is the lack of a steady market for the materials recycled. This is one of the unfortunate results of the throwaway philosophy. Why bother to recycle when plenty of cheap, virgin materials are available? With the growing realization that the supply of virgin materials is finite and that they generally require more energy to process, we can start to reverse this thinking. The ultimate goal

"As we approach our Nation's 200th birthday, we could do worse than to recapture that insight of our puritan fathers, with all the self discipline it implies. Our deepest, most abiding problem is to convince those who make decisions, and those who must accept them, that conservation is more than a short term tactic calculated to solve a temporary problem. Conservation is a strategy for the long term, we must accept it as our new mode of life."

Russell W. Peterson
February 24, 1975

must be the use of recycled materials as the basic supply for making new products and the use of virgin materials only as a supplemental source. This would conserve scarce materials, save energy, and reduce the volume of waste that we now incinerate, bury, or dump in the ocean.

To recapitulate: Through more efficient use of the automobile and by converting our solid waste to energy, we could conserve an equivalent of about 2 million barrels of oil per day. Additional savings also could be accomplished by reducing other wasteful practices in our homes, our offices, and our factories. Most of these are conservation measures that could be initiated immediately. They would help reduce both inflationary and recessionary trends, and they would lessen environmental threats. They would produce appreciable benefits and with a minimum of adverse impacts on our economic and social well-being.

The Committee feels confident that the majority of Americans, when presented with these facts and the alternatives, will opt for these conservation measures which will reduce their family expenditures, secure their jobs, and protect the environment so vital to their own and their children's future.


FROM THIS
OVERLOOK
AS LATE AS 1950
COULD BE SEEN
AMBER WAVES
OF GRAIN

THE LOSS OF AGRICULTURAL LAND

The loss of our agricultural land has become a major environmental problem. It is a big loss—some 2.4 million acres of agricultural land a year—and it is an irreplaceable loss.

Once we did not worry about such loss. Historically, our agricultural abundance was based not only on a plentiful supply of good agricultural lands but on our ability to steadily increase the productivity on these lands. Now, with only so much land left, we may have peaked off on our technological ability to produce more and larger crops per acre of land. The demand for food, meanwhile, keeps rising.

Only a few years ago no such squeeze seemed to threaten. The United States began the 1970's with what seemed to be an abundance of good agricultural land. Controls on the production of many crops were in effect, with some 60 million acres held out of production. The national birthrate was declining, and one of our goals was to increase our export of agricultural products.

In 1972, however, we saw the beginning of dramatic changes in these conditions. A massive sale of grain was made to the Soviet Union. Reserves were soon used up, and domestic food prices rose sharply.

Then, in 1973, came the Arab oil embargo. While city people may not have realized it at the time, the embargo had an even more severe impact upon farmers than it did on motorists. American agriculture has an enormous appetite for petroleum to operate machinery and for natural gas to dry crops and make fertilizer. In very short order, soaring fuel costs were reflected in sharply higher food prices.

Foreign demand for United States crops has continued to rise, both from the Third World, where famine threatens millions of lives, and from the developed nations of Europe and Japan. Although most of the 60 million acres of idled farm land has been returned to production, the hope of reaching a world food production growth rate of 4 percent a year (a United Nations target) may be difficult to realize in view of rising oil prices, bad weather, fertilizer shortages, and other unexpected problems.

Thus, during four short years, we have moved from a surplus to a shortage of agricultural production. We face a rising demand for yet more production, and we have a dwindling supply of land to produce it with.

What are the possible solutions? Over the last two years, this Committee has devoted a great deal of effort to land use problems, including the establishment of a Task Force on Land Use and Urban Growth, whose report, THE USE OF LAND, was published last year. Last summer the Committee undertook a special study of agricultural land. The full report will be published separately. Here, in brief, are the principal findings of that study and other Committee research:

Our Agricultural Land Base

Although the United States has more than 2 billion acres of land, only about 1 4 billion is non-Federal land available for agricultural use. Nearly half of this non-Federal portion is marginal or worse, it is too steep, has soil that is too wet or shallow, has a short growing season, is too susceptible to erosion, or has other serious cropping limitations. Only 631 million acres of non-Federal lands are classified by the Soil Conservation Service as being in Classes I-III, suitable for regular cultivation.

It is the Class I category that is particularly critical. This is the "prime" land—land with nearly level fields and soils that are deep, well-drained, resistant to erosion, and easily worked. At present there are only about 47 million acres in the Class I category. Unfortunately, much of this acreage is located in the same areas where America's cities are situated. This land is in the path of urban expansion, and it offers few, if any, constraints to developers. For them, too, it is prime.

New agricultural lands, it is true, are being added. Over the past two years, most of the 60 million acres of "idled" lands have been returned to production, and about 1 million acres per year of "new" land are being brought into production Most of the latter is the result of drainage irrigation projects in Florida, drainage and clearing in the Louisiana Delta, expanded irrigation in California, Washington, and the Texas High Plains, and clearing, leveling, and drainage in the Corn Belt.

Not all of this conversion, however, is a clear gain. In some cases, such as the conversion of the former dust bowl "shelter belts" to crop production, such action may recreate the environmental hazards prevalent in the 1930 s.

For every 1 million acres of "new" agricultural land brought into production, about 2.4 million acres are irrevocably lost. Some of this loss results from salinity buildup that can make soil sterile. In addition, some reduction in productivity results every year from groundwater depletion and from the loss of 3 5 billion tons of soil each year through erosion on privately owned land. Some of these losses can be mitigated through more extensive conservation practices, such as the installation of deep tile drainage systems to help keep the salinity problem under control in areas where there is sufficient water to flush the salts Other beneficial practices include terracing, establishment of grassed waterways, and contouring to decrease soil erosion. The public benefits of such measures often outweigh those received by the land owner. Because of this and the increasing need to conserve all of our productive crop land, the Committee feels that the question of Federal subsidy of such practices should be reviewed—at least for lands in Classes I-III. The National Cooperative Soil Survey should be accelerated to provide the necessary soil classification data.

The biggest loss of agricultural land, however, is to urban development. Our study indicates that more than 54 million acres of crop land were converted to irreversible uses during a recent 20-year period. Most of this land was used for urban housing, highways, airports, power plants, solid waste disposal sites, shopping centers, and reservoir construction.

Another urban conversion index is the amount of agricultural land located within or being added to the 242 Standard Metropolitan Statistical Areas (SMSA's) designated by the Office of Management and Budget. It is estimated that about 20 percent of all U.S. farms are within these areas. These farms produce about 60 percent of all vegetables sold, 43 percent of the fruits and nuts, and about one fifth of the Nation's total food. The value of these products is about 25 percent of all agricultural products sold.

As the speculative value of these close-in farm lands rises, so do the property taxes Together these factors increase pressure on the farmers to sell out to urban developers. An examination of aerial photographs shows clearly how residential subdivisions utilize roads and highways in existence and spread over well defined land areas that formerly were fields or entire farming units.

A major urban conversion indicator is the number of counties added to the Nation's SMSA's A county is added to this category when a city within its boundaries grows to 50,000 or more. It is estimated that these urbanized counties added another 7 million acres to SMSA's in the 10-year period ending in 1970.

The overall result is that even with the increase of 1 million acres of "new" land being put into production, the gross loss of 2.4 million acres per year produces an annual net deficit of 1.4 million acres. This is greater than the total land in the State of Delaware. Unless adequate measures are taken to slow this process, the Senate Committee on Interior and Insular Affairs has estimated that during each future decade, such loss will amount to an area larger than the State of New Jersey.

Another unfortunate implication of agricultural land conversion is the loss of specialty crops that can be grown only in certain areas. For example, heavy development pressure is threatening the very existence of avocados, Brussels sprouts, and artichokes in California, and the red tart cherry orchards in Michigan.

Trends and Solutions

What is being done to curb the losses? The most common approach, adopted by 30 States, is to give preferential treatment to farm land. Essentially, this means that farm land is assessed only on the basis of its value as farm land, not full market value. In some cases, there is a "roll-back" provision—if the farmer does sell the land for development, he has to pay back several years' worth of the additional taxes he got out of the low assessment.

So far, however, preferential assessment has done little more than delay some losses in the direct path of urban growth. Preferential assessment does not take away the farmer's development rights—it just taxes him as though it did. The hard fact is that the profits to be made by development are far greater than the savings to be had by farming, and far greater than any roll-back tax payment required.

Other approaches are being tried out. A study for the California Legislature in April 1972 showed that some 134,000 acres of farm land in that State

U.S. Department of Agriculture aerial photographs taken in 1953 and 1972 graphically illustrate how much agricultural land near Sacramento, California, has been preempted in 20 years by highways, houses, trailer parks, schools, and other kinds of urban development. Of special note is the area covered by roughly parallel lines in the lower right hand corners. These are rows of raw gravel resulting from the extensive hydraulic gold mining operations that desecrated hundreds of square miles of the Sacramento Valley in the early 1900's and have remained forsaken—even by developers.

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were being converted each year to other uses. It warned that, without action taken to prevent it, more than three fourths of California s crop land would be consumed by urban and other development over the next 30 years. In the general elections the following November, Californians voted in favor of Proposition 20 to establish the California Coastal Zone Conservation Commission. That Commission is making a strong effort to preserve agricultural land under its authority to regulate all construction within 1,000 yards of the coast. This is a valiant move, but whether the Legislature will approve its recommendation to keep these lands in agriculture remains to be seen. And, of course, it would apply only to the coast lands, a small though important part of the state's total.

A report from the State of Michigan in 1973 showed that the State had lost more than one third of its original base of 18 million acres of agricultural land over the past 30 years. Each year about 35,000 acres of prime farm land and another 50,000 acres of open and rural land were being converted to a more intensive and usually urban associated use If this trend continues, the report concluded, Michigan will have only 2.5 million acres of agricultural land left by the year 2000. As a result, the Michigan Department of Agriculture has proposed a plan that includes the creation of agricultural districts, acquisition of development rights, and taxation of agricultural land at its current use value. Bonds backed by tax revenues would provide funds for buying the rights. The Legislature promptly adopted the preferential taxation proposal but is taking a longer look at the others.

In New York State, more than 1.2 million acres of land have been put in agricultural districts under a 1971 law aimed at retaining New York's important agricultural business in the face of growing urban pressure and speculation. The statewide program, proposed by the State Commission on Preservation of Agricultural Land, provides these special features:

- Local ordinances cannot restrict structures and activities normal to farmers,
- Public agencies cannot take farm land without special justification,
- Sewer and water taxes cannot be levied on farm land (beyond a house and lot) once a district has been formed;
- Property tax assessments may be based on agricultural instead of market value.
- The tax assessment provision includes a roll back feature, covering the previous five years.

Suffolk County, which occupies the eastern end of Long Island, has adopted this approach. Suffolk s population was 660,000 in 1960 and had grown to 1.26 million by 1973. Meanwhile, its land in farms dropped from 120,000 acres in 1950 to just over 60,000 acres in 1974, and its ability to keep producing its highly prized farm crops—potatoes, cauliflower, lettuce—was threatened. To stem the loss, the County Legislature has committed $60 million to be used over the next four years in buying development rights on agricultural land. Farmers selling development rights, which represent about 80 percent of the market value, get a comparable property tax reduction. Once purchased by the County, the rights become

capital assets and cannot be sold or transferred without voter approval in a referendum. The first in the Nation plan was shaped by County Executive John V Klein, who hopes it will rescue at least 12,000 acres of prime land from developers.

A similar plan is being studied by the "Garden State" of New Jersey, which now finds itself in the embarrassing position of importing 85 percent of its food supply. And, like Suffolk County's truck farm crops, New Jersey's blueberries, tomatoes, and asparagus are close to the New York Metropolitan Area and highly prized by local customers. In 1971 the Governor created the Blueprint Commission on the Future of New Jersey Agriculture. The Commission came up with a plan that would require each municipality in the State to designate to an Agricultural Open Space Preserve (AOSP) a minimum of 70 percent of its open prime farm land in Classes I-III, as defined by the Soil Conservation Service, and special agricultural lands. The lands so designated would be restricted to agriculture and related open space, and owners could sell the development rights to the State. The purchases, financed by a tax on all real estate transfers, would enable New Jersey agriculture to survive the onslaught of the northeastern megalopolis. A proposal to effect this action is now pending in the New Jersey Legislature.

In a recently published "white paper entitled THE VANISHING LAND, the Connecticut Conservation Association has recommended that Connecticut designate important agricultural areas and then acquire development rights with revenues from a tax on real estate transfers. Subsequently, in December 1974, the Governor's Task Force for the Preservation of Agricultural Land proposed that in order to provide about one third of its food, Connecticut should reserve at least 350,000 of its remaining 500,000 acres of agricultural land. To accomplish this, the Task Force recommended the following.

- The agricultural reserves in a town should be designated by the zoning authority or other duly constituted town body, with the advice of local farmers and under guidelines established by a State authority for agricultural lands. Following the designation of a reserved area, it should not be available for development. If the town does not act within a year, the State authority should be empowered to designate it.
- The land within the reserves should be preserved for growing food by the State purchase of development rights.
- Guidelines to assure maximum food from minimum acres, procedures for purchase of rights, and the administration of the program should be the assignment of an unpaid authority of nine members.
- The purchase of development rights in the reserves should be financed by the issuance of bonds under the full faith and credit of the State. The bonds should be issued as needed under a maximum authorization of $500 million.
- The development rights should be held forever by the State unless relinquished by mutual approval of the owner, a town referendum, and the State authority.

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and taxation of agricultural land at its current use value. Bonds backed by tax revenues would provide funds for buying the rights. The Legislature promptly adopted the preferential taxation proposal but is taking a longer look at the others.

In 1973 the Oregon State Legislature passed several innovative amendments to its Agricultural Land Preservation Act. Oregon s Willamette Valley, housing 75 percent of the State's population, is comprised of verdant, fertile farm land which is just beginning to fall prey to the all-too-familiar patterns of urban sprawl. To halt the uncontrolled development, a system of tax incentives for retaining land in farm-use zones, consistent with county-wide overall development plans, was initiated. Oregon's statute is unique among the 19 States which have some type of deferred taxation provisions, it contains a roll back provision covering some 10 years and charges 6 percent interest on the additional tax as well.

The new amendments provide that farm-use land is exempt from non-farm assessments and levies. Furthermore, an inheritance tax provision provides that the inheritance assessment is made at the farm-use value. Another new provision to protect agricultural land specifies that dust, odor, and noise cannot be regulated in a farm use zone unless they exceed accepted farm-use practices.

Saskatchewan, Canada's biggest grain producing province, is using an interesting method to help keep small farms profitable. Over the years, the practice of giving each child a share of the father s homestead had resulted in farm units too small to be profitable, and the young people could not afford even to purchase adjacent lands being "retired" by those who chose to move to the city. With the resulting flow of people from rural to urban areas during the 1960's, the Province had lost half of its farm population in a decade. To reverse this trend, the Province established a Land Bank Commission to buy up these "retired" lands and lease them to small farmers who could not afford to buy them. In its two years of operation, the Commission has purchased 517,000 acres, it has leased the land to 1,400 farmers at a rental fee of 5-3/4 percent of the property's value. The success of this program is receiving increasing attention as a possible model for other areas in North America.

Environmental Impact Statements

The requirement of the National Environmental Policy Act (NEPA) for environmental impact statements has been successful in bringing about the revision of many proposed Federal projects to avoid adverse impacts. As a result, more than 20 States have enacted similar requirements with respect to State projects. Only California requires this process for non-governmental projects as well. Although all required statements include analysis of possible impacts on agricultural lands along with other environmental considerations, no particular emphasis is given to the loss of agricultural lands *per se*.

Now, however, the continuing loss of these lands so critical to our future food supplies may justify the application of this process to *all* development projects that threaten agricultural lands in at least Classes I-III.

And even more stringent regulation may become necessary. It is possible,

for example, that all federally supported energy development projects, airports, or highways could be specifically prohibited from taking land in Classes I-III.

Need for National Legislation

The United States has no policy or plans designed to preserve agricultural land. As a result, agricultural land decisions are currently being left to speculators, developers, some local groups, and others who view land as a commodity. Little thought is given to alleviating factors that force the conversion of agricultural land to urban-related uses or to the consequences of the removal of land from agricultural production. Much of this is happening, we believe, because of the lack of a national philosophy concerned with improving the use of land in this country. The Committee believes we must develop a national land use ethic. An important component of such an ethic should be the preservation and wise use of agricultural land.

Although the land use planning bills debated in the 93rd and earlier Congresses contained provisions for protecting critical environmental areas, there was little discussion of the need for agricultural land preservation. This omission could well have stemmed from the fact that when national land use legislation was first considered in 1970, there seemed to be an ample supply of agricultural land, and it was assumed that technological developments would continue to increase yields per acre and thus meet the food needs of an expanding population.

In the light of the subsequent dramatic changes in the food supply picture, it is now clear that the preservation of an adequate supply of agricultural land is essential to the welfare and security of the Nation and should be a major objective of land use planning legislation.

The Committee, as in previous years, strongly recommends enactment of comprehensive national land use planning legislation along the lines of the bills submitted by the Administration and passed by the Senate. We further recommend that the legislation specifically recognize the need for preserving agricultural land.

We believe that agriculture will be one of the major beneficiaries of such legislation. The immediate goal of the national legislation is to stimulate, through the infusion of Federal funds, the preparation of comprehensive State land use plans. These plans would be excellent vehicles for focusing attention on the importance of agricultural land and on the need for preserving it. We urge all interested agricultural groups to join in support of a national land use planning bill.

Crop land has too long been considered as an unlimited land bank to be drawn on at will by the continuing spread of urban development. Now it is critical that the Nation's cities retain the remaining alluvial valleys and fertile plains in agricultural use—lest we wake up one day to a continuous strip of developments, clogged highways, commercial strips—and an empty breadbasket.

"When the sun comes shining and I was strolling
And the wheatfields waving and the dust clouds rolling
As the fog was lifting a voice was chanting
This land was made for you and me."

From "This Land is Your Land"
Words and music by Woody Guthrie
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New York, N.Y.
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PATTERNS OF THE FUTURE

It was in 1974 that most Americans began to realize that their country is entering a period of basic change. The initial jolt came from the Arab oil embargo—gasoline station lines, lowered thermostats, and a nationwide drive to save energy in all forms. In our energy intensive society, the ripple effect was swift and far reaching, as the shortage of oil created other shortages in numerous products that depend on it as fuel or feedstock.

Even after the embargo was lifted and gasoline again flowed freely, there remained an uneasy feeling—a subtle, almost subconscious feeling of living on borrowed time. Drastic increases in oil and food prices led the way to all time highs in the cost of living, putting new pressures on budgets already under strain. And mounting unemployment brought real hardship to thousands of individuals and families.

There was a growing realization that change in living patterns was upon us and a widespread apprehension over what we might lose. But relatively little thought was given to what we might gain from the changes.

The Committee believes that, in accordance with the basic principles of ecology, certain changes are necessary and desirable, and that the net effect of these changes will be a simpler life style, and one that can be more rewarding to individual citizens and beneficial to our society.

The Roots of the Problem

During the quarter century following World War II, the watchword of American society was *growth*.

- Fueled by the baby boom, population soared. A meter was installed in the lobby of the Commerce Department to record the gain each few seconds, and California proudly proclaimed itself the most populous State.
- The gross national product mushroomed, and expanded technology spawned a variety of new products. A host of synthetic substances, many of them derived from petroleum, entered the market place, displacing more traditional "natural" raw materials.
- Growth of the automobile was extraordinary, both in numbers and size. By 1973 there were 102 million passenger cars on the road, up from 23 million in the 1930's. Two and even three-car families became commonplace. And each year the cars grew longer, wider, and heavier. "Bigger is better" was the name of the game. And to accommodate the automobiles, billions of dollars were spent on a vast system of highways.
- Suburban growth, made possible by the automobile and new highways, transformed the living patterns of the Nation. Unfortunately, too much of this growth was unplanned and poorly located.
- The consumption of energy in both absolute and per capita terms increased at a constantly accelerating rate.

- Concommitant with the other types of growth was the growth of expectations. Readily accepting the abundance of material possessions, most Americans assumed that growth could and would continue, and they looked forward to more and more of the same.

While the rewards were welcomed, little thought was given to the debit side of the ledger. The Nation became wasteful in the extreme—wasteful of energy, food, fibre, and minerals. All too readily we adopted a throwaway philosophy and accepted the concept of planned obsolescence. Nor did we express much concern about the effect of all this on the environment—the increased pollution of our air and water, the growing mountains of solid waste, and the wide dissemination of toxic substances.

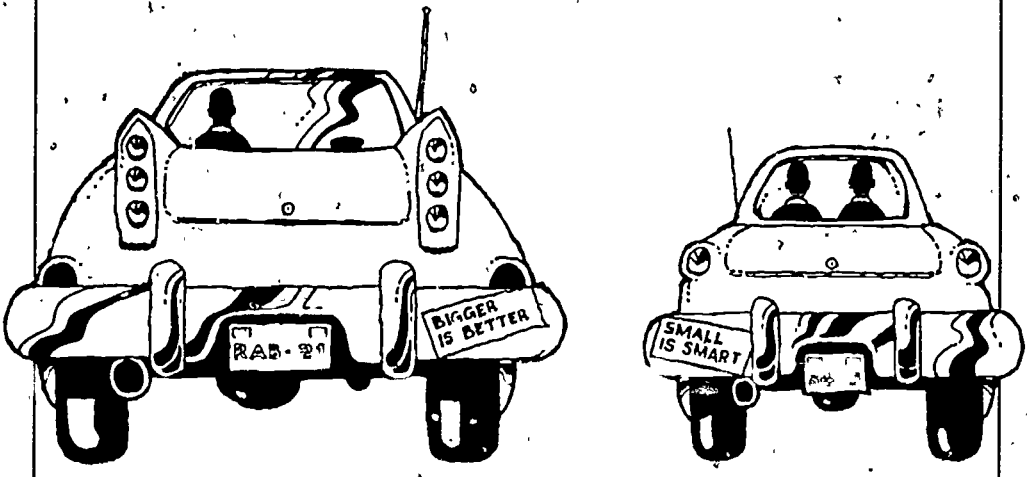
But the mounting evidence could not be ignored indefinitely. As smog enveloped one city after another and foul water endangered the public health, citizens became increasingly concerned. The early 1970's saw an environmental awakening. In the spring of 1970, Earth Day sparked thousands of celebrations, large and small. The National Environmental Policy Act, the Clean Air Act of 1970, and the Water Pollution Control Amendments of 1972 embodied a national commitment to preserve the environment. At the United Nations Stockholm Conference on the Human Environment, more than 100 nations embraced the concept of Only One Earth and laid the foundation for international programs of environmental protection.

All of this was encouraging progress. But the shock of the oil embargo reemphasized the finite nature of the earth. Because of the embargo's dramatic impact upon our daily lives, it made Americans recognize for the first time how completely dependent they are upon physical resources and the environment. This recognition led, in turn, to the realization that change must come.

Changing Patterns

What sort of changes, then, are in store for the American people? Need we fear them? The Committee thinks not. On the contrary, we should fear a lack of change, for to continue on our present course will only exacerbate the problems that now beset us. And in a more positive vein, many of the changes we can and must make in our living patterns to help solve our environmental and economic problems can also be constructive in terms of preserving life, liberty, and the pursuit of happiness—for individuals and for our society as a whole.

Some of the changes will not be easy. Involuntary change seldom is. Nevertheless, the Committee believes that Americans will accept the changes once they understand the need for doing so. After all, the strength of our country over the last two centuries has been based on the willingness and ability of its people to accept hard challenges. Our ancestors braved the frontier and survived a tragic civil war. Many citizens living today remember how Americans worked together to surmount the hardships of the Great Depression and World War II. Certainly we have the will to adapt to the new conditions now facing us.


BIGGER IS BETTER
SMALL IS SMART

In considering what changes are needed, let us first review the goals we should seek to attain. There are several basic ones:

- We should get rid of our wasteful habits. Since waste, by definition, is non productive, it does not contribute to our standard of living,and thus its elimination would not deprive us of anything we need.
- Most urgently, we should eliminate the enormous waste of energy that now takes place. Energy conservation and energy efficiency must be built into every facet of our society and economy.
- We should conserve resources of all kinds. Current shortages of basic materials are warning signals that we can no longer afford to ignore. We must abandon the throwaway philosophy, discard planned obsolescence, and build products that will last—products that are worthy of American craftsmanship and technology.
- We should consider the long term effects of all our actions. In too many areas we are using up scarce capital rather than living within our income. We should think more in terms of quality rather than quantity. Recent experience should convince us that "bigger" is not necessarily "better."

With these goals in mind, let us examine some of the specific things we can do to achieve them and how these would affect our lives.

Conservation of Materials

Since all resources of the earth are finite and since the earth is, in fact, a closed system, we must ultimately recycle everything possible. So far we have not done very well. We waste enormous amounts of food, fibre, and minerals with little thought for future shortages that could confront us as suddenly as the energy crisis.

Citizens can organize their daily living habits to encourage recovery, recycling, and reuse of every possible resource. This includes sorting cans, bottles, paper, and trash and taking them to appropriate collection points, buying reusable beverage containers rather than the throwaway cans and bottles, avoiding whenever possible the purchase of overpackaged goods, and supporting better community solid waste management systems that are more efficient, save money, and facilitate recycling and energy conservation.

"Use it up, wear it out, make it do, do without." This motto of our thrifty 19th century forebears has for too long been considered an anachronism. It is not.

Transportation

Much has been written about America's "love affair" with the automobile and how difficult it will be for her citizens to change their views and driving habits. It could well be, however, that the difficulty is more apparent than real.

The United States can no longer afford the waste of energy and materials inherent in the standard American automobile. There must be an accelerated move toward smaller, lighter, and more efficient automobiles. It will take up to a decade to accomplish the conversion, which makes it all the more important to start as soon as possible. The

Committee believes that when Americans fully understand the need for change, they will be willing to drive smaller and simpler cars. A vice president of an American automobile company recently said, "We hope the American public will drive the car that does from zero to 60 in 18 seconds rather than 12 seconds, because that's where we are going." This is hardly a major sacrifice, and it seems likely that many citizens would accept much more. Is there, indeed, any justification for building a car that will go 85 miles per hour (many will go even faster) when the national speed limit is 55?

But vehicle size is not the only factor affecting fuel economy. A car buyer who is seriously interested in conserving energy will wish to consider a number of other questions. Is air conditioning really needed? How about automatic transmission, power windows, power seat adjusters, and other gadgets that consume additional energy?

The change from larger to smaller cars that started during the Arab oil embargo will continue and grow for a combination of reasons, including personal choice, economic pressures, and laws designed to protect the public interest. Many of the growing number of Americans who are deeply concerned about environmental quality and are well aware that small cars consume less energy and cause less pollution will consider it a matter of principle to buy a small rather than a large car.

A continuing shift in consumer values is also a factor in the trend toward smaller cars. The importance of the automobile as a status symbol is declining, thus lowering the pressure to "keep up with the Joneses." Since in the past this has meant "trading up to a larger car," the lowering of this pressure means that more people will stick with small cars. Indeed, there appears to be considerable social pressure on owners of large cars to trade down.

Cost, of course, is also a factor. As inflation makes people more cost conscious, they are beginning to realize that not only do small cars cost less to purchase but also significantly less to operate. Figures released by the Department of Transportation in May 1974 show a total operating cost of 15.9 cents per mile for a standard-size car, 12.9 for a compact size, and 11.2 cents for a subcompact. Over the anticipated 10 year life of the cars, the difference in cost of ownership and operation between the standard size and the subcompact amounts to $4,739.

If voluntary decisions by individuals and families do not cause a sufficient shift to small cars to meet national requirements for energy and resource conservation, there could be various kinds of mandatory action, such as a tax on horsepower or weight. A study published by the Oak Ridge National Laboratory shows that total energy requirements for a full size car are almost 70 percent higher than those for a subcompact car.

Another significant and constructive change taking place is the growing use of bicycles, not only for recreation but for commuting to work and doing errands. The increase in bicycle commuters has been remarkable in a number of cities, even though regrettably little or no provision has been made to facilitate such use. Now that money from the Highway Trust Fund and from a number of State funds is available to pay for bicycle trails, lanes, and other

facilities, there is expected to be a gradual but ultimately substantial increase in bicycle use. And as the Committee has pointed out in its new publication, FROM RAILS TO TRAILS, State and local governments now have an unprecedented opportunity to acquire needed recreation space on abandoned railroad rights of way. Such railroad lines, which crisscross every region of the country, are ideally suited for bike trails, and citizens should assure that this important linear resource is not wasted.

There appears to be a genuine interest in bicycle commuting if safety and convenience can be improved. A survey of automobile commuters in Denver found 40 percent of them interested in shifting to bikes if safety could be upgraded, and a similar poll in Philadelphia showed 27 percent of those questioned ready to convert. These remarkably high percentages are powerful arguments for making the relatively small investments that would yield such high benefits in terms of energy conservation, reduction of air pollution, lessened traffic congestion, and human health.

The use of mass transit is also increasing.

Recent experience has shown that where convenient, fast, and dependable public transit is provided, it can attract people away from their cars. Good examples can be found in the Lindenwald High Speed Line which runs from southern New Jersey into Philadelphia and in the San Francisco Bay area where the Golden Gate Bridge Highway and Transportation Authority operates comfortable buses and ferries between the city and Marin County to the north. Another is the Shirley Highway Express buses operating between Washington, D.C., and the northern Virginia suburbs.

After years of neglect public transit is receiving renewed attention in almost every major city. A strong incentive behind this is the Clean Air Act of 1970, which requires all cities to improve the quality of their badly polluted air. And the energy crisis, of course, has been an additional spur to get on with this important task. Fortunately, after many years of battle, Congress has made some financial aid available from the Highway Trust Fund. It is far from adequate, but it is a start.

Food and Gardening

As food prices rise rapidly, more and more Americans are beginning to grow a portion of their food supply. Those with yards, however small, find it easy to devote a part of the area to a vegetable garden. Others who live in apartments establish garden plots in donated or rented space in vacant lots. These efforts contribute significantly to increasing the quantity and improving the quality of food consumed in the Nation while transforming unsightly vacant lots into blooming benefits.

Urban and suburban gardeners find that this activity can yield real and substantial benefits in the form of surprising amounts of fresh vegetables, relief for the family budget, healthy outdoor recreation, and the satisfaction that stems from direct contact with the earth.

Many of these tillers of the soil are dedicated to organic gardening, which uses no petroleum based commercial fertilizer. Experience has taught them

"The challenge presented by the energy problem is one of developing a new life-style—a development which logically and inevitably must begin with a change of man's relation to the soil, of which he is a product and which alone sustains his life."

E.F. Schumacher

that a productive organic garden can provide an even greater source of pride than a heavily fertilized, lush green lawn.

Gardeners of varying ages, races, incomes, and backgrounds trade gardening tips, and the feeling of urban isolation often vanishes when, with hoe and watering can in hand, neighbors discuss high-yield tomato varieties or compatible planting techniques.

Vegetable gardening eases pressure on strained family food budgets, as well as on transportation and energy resources. Moreover, it yields a harvest of beneficial by-products such as relaxation, exercise and a new neighborliness.

In conclusion, the Committee repeats its belief that Americans will accept with good grace the changes that must be made in our living patterns. As Chairman Russell Peterson of the Council on Environmental Quality summed it up: ". . . we will all have to change our ways—either unwillingly, in helpless response to one shortage after another, or willingly, in rational, deliberate response to the twin perceptions that everything affects everything else and that we are spending not only our dollars but our earth."

APPENDIX*

The Citizens Advisory Committee on Environmental Quality was established by Executive Order 11472 of May 29, 1969, which reconstituted the earlier Citizens Advisory Committee on Recreation and Natural Beauty originally created in 1966. Under the provisions of the Federal Advisory Committee Act of 1972, President Ford renewed the Committee's charter by Executive Order 11827 of January 4, 1975.

Under the terms of the Executive Orders, the Committee is to advise the President on all matters pertaining to environmental quality. In addition, the National Environmental Policy Act of 1969 (Public Law 91-190) provides that the Council on Environmental Quality, which was established by the Act, shall consult with the Citizens' Advisory Committee. Thus, the Committee is advisory to both the President and the Council.

The Committee consists of 15 members, appointed by the President to three year, staggered terms. On November 27, 1974, President Ford appointed Richard M. Fairbanks III of the District of Columbia and Mrs. Terese T. Hershey of Houston, Texas, as new members, and reappointed Jack B. Olson of Wisconsin Dells, Wisconsin, and Dr. Joseph L. Haller of Hollidaysburg, Pennsylvania, for terms expiring May 3, 1977.

Since the publication of its October 1973 REPORT TO THE PRESIDENT AND TO THE COUNCIL ON ENVIRONMENTAL QUALITY, the Committee has held the following meetings. January 11, 1974, in Washington, D.C., April 12, 1974, in Washington, D.C., and September 29-30, 1974, in Madison, Wisconsin.

Since its inception, the Committee has published a number of reports and special studies. A list of all previous publications and their availability follows this Appendix.

In August 1973, the Committee's Task Force on Land Use and Urban Growth published THE USE OF LAND. In early 1974, as a followup to the report, the Committee co sponsored with The Conservation Foundation, and in cooperation with the National Legislative Conference, three regional conferences entitled State Land Use Legislation. Issues and Options." These conferences, held in Boston (February 28 March 2), Chicago (March 14-16), and Philadelphia (March 28 30), afforded State legislators, other State and local officials, and representatives of a wide range of nongovernmental interests an opportunity to discuss the key issues involved in establishing State programs for land use planning and regulation. Another followup activity was the preparation of a 30 minute video tape on land use based on the symposium sponsored by the Task Force at the Smithsonian Institution in May 1973. The League of Women Voters plans to use the tape on cable television in several major cities across the country.

Alice Tetelman, who came to the Committee staff in November 1973 to coordinate the followup on the Task Force land use report, returned to the consulting firm of Linton & Company, Inc., on January 1, 1975.

* Certain actions cited in this Appendix occurred in calendar year 1975, subsequent to the December 1974 date of the report, but prior to its printing.

ILLUSTRATION CREDITS

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PREVIOUS PUBLICATIONS

Citizens' Advisory Committee on Recreation and Natural Beauty

Annual Report to The President and to The President s Council on Recreation and Natural Beauty. June 1967. 28 pp. (out-of-print)

Annual Report to The President and to The President's Council on Recreation and Natural Beauty. June 1968. 40 pp. (out-of-print)

The Electric Utility Industry and the Environment. A Report to the Citizens' Advisory Committee on Recreation and Natural Beauty by the Electric Utility Industry Task Force On Environment. 1968. 106 pp. $2.00.

Community Action for Natural Beauty. 1969. 42 pp. (out-of-print)

Citizens' Advisory Committee on Environmental Quality

Report to The President and to The President s Council on Environmental Quality. August 1969. 36 pp.

Ottauquechee. A National Prototype. 1969. 20 pp.

Community Action for Environmental Quality. 1970. 42 pp. (out-of-print)

A New Approach to the Disposal of Liquid Waste. 1970. 24 pp.

*Report to The President and to The Council on Environmental Quality. April 1971. 56 pp. Price. 65 cents. Stock Number. 4000-0265.

*Annual Report to The President and to The Council on Environmental Quality for the Year Ending May 1972. 64 pp. Price. $2.00. Stock Number. 4000-0278.

*Citizens Make the Difference. Case Studies of Environmental Action. 1973. 72 pp. Price: $1.75, Stock Number: 4000-00290

The Use of Land. A Citizens Policy Guide to Urban Growth. 1973. 318 pp. Available from the publisher. Thomas Y. Crowell Company, 666 Fifth Avenue, New York, N.Y. 10019, Department T-4. Paperback $3.95. Cloth $10.00.

*Citizen Action Guide to Energy Conservation. 1973. 64 pp. Price. $1.75. Stock Number 4000-00300.

*Report to The President and to The Council on Environmental Quality. October 1973. 48 pp. Price $1.05. Stock Number. 4000-00303.

*Energy in Solid Waste. A Citizen Guide to Saving. 1974. 40 pp. Price. $1.25. Stock Number: 4000-00319.

*From Rails to Trails. 1975. 68 pp. Price. $1.50. Stock Number. 040-000-00330-4.

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*For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. A 25% discount is allowed on orders of 100 or more copies delivered to one address.

Unless otherwise noted, copies of these publications are available from the Citizens Advisory Committee on Environmental Quality, 1700 Pennsylvania Avenue, N.W., Washington, D.C. 20006.

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For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Price. $1.25 each. A 25% discount is allowed on orders of 100 or more copies delivered to one address. Stock No. 040-000-00333-9.